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Vulnerability of HIV/AIDS orphans to floods in Malawi

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ABSTRACT

Referred to as the 'forgotten causalities' of climate change (Cutter 1995), very few studies have examined the precise nature and magnitude of climate change impacts on children, let alone on the growing number of orphans and vulnerable children in Sub-Sahara Africa (SSA), where climate change is already expected to exact its worst humanitarian toll. This paper examines personal, familial, and contextual circumstances that arise when children lose their parents to HIV/AIDS and how these situations mediate exposure to the impacts of climate-related disasters. Using the case of flash floods that occurred in Malawi in 2015, and drawing on perspectives from political ecology and social vulnerability theory, the findings of a qualitative study (n = 51) suggest that orphans' vulnerability to floods was mediated by a number of specific circumstances. These include pre-existing physical health status of surviving parent or guardian, domestic roles they inherited following incapacitation or death of a parent, and social norms governing property inheritance within the traditional extended family system. In addition, the findings also show that the floods shattered livelihoods, forcing orphans into prolonged engagement in exploitative labour pursuits. Furthermore, the findings show that the rainstorm also swept away mementos left behind by parents, with profound effect on orphans' emotional wellbeing, which affected their interpretation of the meaning of the disaster. The study underscores (i) the potential of climate change to reconfigure social relations and entrench orphans' subordinate status (ii) the historical specificity of the factors that mediate the effects of climate change on children.

1. Introduction

It is widely acknowledged that climate change will disproportionately impact children. According to UNICEF, more than half a billion children currently live in areas with extremely high flood occurrence, leaving them highly exposed to the impact of climate change (UNICEF, 2015). However, because climate change has such variable impacts even among individuals in the same community, area, region or country, it does not affect all children equally. Climate-induced disasters that may have little or no effect on some children could have shattering effect on other groups of children.

This paper seeks to contribute to the literature on climate change by examining personal, familial, and contextual situations that arise when children lose one or both parents to HIV/AIDS and how these circumstances amplify exposure to the impacts of extreme weather events. Although not specifically focussed on children, a number of studies have generally shown that different groups of people face different degrees of exposure to and prospects of recovery from climate disasters, mediated by socially defined roles and responsibilities (Cannon, 2002; Sugden et al., 2014). Factors that underpin unequal social impacts of climatic disasters include socioeconomic status, age and geographic location. In a study on flooding in urban Lagos, Nigeria, for instance, women faced not just excessive exposure to but also slower recovery from flash floods. The same study, however, also indicates that among the women affected, the impact of the floods was not uniform; it considerably varied by physical location or place of residence of the women (Ajibade et al., 2013).

Similarly, examining the impacts of and responses to extreme flooding in coastal and floodplains of Bangladesh, Sultana (2010) found variations in impacts structured along the lines of gender and socioeconomic status. Again, although this study was not about children, it serves as an important reminder of the highly uneven impacts of climate change. In fact, the study shows that communities in Bangladesh perceive and relate differently to different types of floods depending on the timing and longevity the flooding. These communities distinguish between seasonal floods that are cyclical in occurrence and beneficial in terms of enriching valleys, irrigating crop-fields and maintaining hydrological balance on the one hand, and prolonged floods which are irregular and unpredictable and, typically detested, because they destroy infrastructure, crops and livelihoods, on the other. This study further found that when prolonged floods occur, women emerge worse off because of a tendency among husbands to mortgage off their wives' possessions, such as kitchenware, jewelry, utensils, and livestock, as the first line of defence against livelihood stress in the immediate aftermath

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of the flooding. While by no means exhaustive, these studies highlight differential impact of climate-induced disasters.

A key principle guiding policy efforts geared toward improving climate change adaptation is the need to prioritize the needs of vulnerable groups. Children as a group with social, cultural and political status distinct from adults are especially vulnerable to the impacts of climate change (Cutter 1995; Bartlett, 2008). HIV/AIDS orphans or children living in HIV-affected families are, however, even more vulnerable.

Thus, the conceptual rationale guiding this paper is that the negative impacts of extreme weather events such as floods are likely to be more burdensome on social groups who already have pre-existing vulnerabilities. To that effect, research from other domains has identified specific aspects of HIV/AIDS orphans' personal lives and social circumstances that make them overly vulnerable, but how these circumstances might increase or mediate the vulnerability of these children to the impacts of climate change remains unknown. For instance, studies have shown that HIV/AIDS affected families tend to be extremely poor. The long period of illness that typically precedes HIV-related death drains household resources and assets, sometimes leaving the children in debt (Whiteside, 2002). If one parent survives, they usually also have HIV/AIDS, which makes them dependent on the children for nursing care, nutrition, and emotional support. This situation forces the children to assume adult roles and responsibilities prematurely (Evans and Becker, 2009; Bauman et al., 2006). If both parents are deceased, the children are likely to be placed in poor households, usually female-headed, or to be fostered by grandparents, who themselves may in different ways depend on the same orphans e.g. for food, chores or farm labour (Mkandawire et al., 2014; Chirwa, 2002). After the death of biological parents, the transition to being parentless is typically uncertain and rough for the orphaned children, often marked by violence, property grabbing and forced evictions by paternal relatives (Zagheni, 2011; Izumi, 2007). While not exhaustive, the foregoing highlights unique attributes of orphans that can mediate exposure to the impacts of climate change.

Although is still thin, there is a growing body of literature that is examining the issue of vulnerability of children in SSA within the context of complex interaction of multiple stressors and causal links that incorporates HIV/AIDS and climate change as components of an array of the key stressors. The study by Drimie and Casale (2008), for instance, shows that HIV/AIDS hampers the ability of families and communities to rally from the impacts of stressors such as extreme weather events. In addition, HIV/AIDS particularly reduces the ability of families to make livelihood choices that focus beyond immediate survival needs, making it difficult for households to engage in long-term planning that would secure the future of their children (Drimie and Casale, 2009). Generally, the interactions between HIV/AIDS and climate change and the implications of this interface for children are evident by the fact that AIDS devours household- and community-level capacity, as well as the capacity if institutions such as state and civil society to support livelihoods (Drimie and Gillespie, 2010; Shackleton and Shackleton, 2012).

The present study builds on these studies to extend the literature on the interaction between HIV/AIDS and climate change to the realm of orphans, as a special group of vulnerable children. Already expected to experience the worst impacts of climate change, SSA is home to 80% of children orphaned by HIV/AIDS (Parry, 2007; Watson et al., 1998). Many countries in SSA have a large number of orphans. For instance, 10% of the population in Malawi are orphans. South African and Uganda each has 7% of its national population as orphans (UNAIDS, 2014). This implies that efforts to address the question of climate change adaptation in SSA would have to take into account the needs and challenges of this growing demographic. The current paper adds to this literature by examining how orphanhood increases vulnerability to the impacts of climatic events through the lens of flash floods that took place in Malawi in 2015.

2. Political ecology approach

This study draws on the political ecology framework to examine the vulnerability of orphans to the impacts of climate change. Political ecology brings together historical, structural, and spatial aspects of vulnerability to the impacts of climate change into a single analytical framework. It also seeks to demonstrate how exposure to and risk of climate change impacts is socially and politically produced and maintained (Adger, 1999; Rocheleau, 2008). Within the context of this study, for instance, orphans' vulnerability to climate-induced disasters could be understood as socially- and politically-produced (Forster et al., 2005; Kalipeni et al., 2004), as resulting from lack of appropriate support systems and resources to reduce the exposure to the impacts of the floods. Another key point is that exposure and vulnerability to climate change is often unevenly distributed. Different groups of people face varying degrees of exposure and vulnerability, depending on the nature and degree of access to support systems and resources needed to prepare for, moderate, or reduce the adverse effects of climate change (Blaike et al., 1999; Robbins, 2011). Typically, vulnerability results from failure of individuals or groups of individuals to rally from exogenous shocks emanating from interplay of causal forces and multiple processes operating at local, national and global scale.

Vulnerability is also located within complex link between political economy, kinship systems, social traditions and cultural politics (Blaikie, 2008; Robbins, 2011). This highlights the role of social power in shaping vulnerability to climate change (Pelling, 1999), including aspects of societal organization such as social mores, traditional beliefs, kindred networks, resource entitlements, and socially constructed rules governing property inheritance dictate the nature of support systems and resources available to orphans to protect themselves from the impacts of climate change.

In societies with deep social inequities, women tend to face greater exposure to risk and have lower capacity to mitigate the impacts of disasters. A feminist political ecology standpoint is thus required to better understand how vulnerability to climate change impacts is mediated by gender differentiated risk and opportunities that men and women encounter in their daily life (Rocheleau et al., 2013; Bezner-Kerr, 2005). Gender norms and roles, for instance, interact with place, socioeconomic and environmental conditions to structure the impacts of climate change for male and female orphans differently. Feminist political ecology also represents a marked departure from a dualistic understanding of gender to one whose precise meaning stems from its intersection with other identities, roles and responsibilities. It also rejects the notion of women as an undifferentiated group by drawing attention to the varied dimensions of power and context in which gender interacts with other structural factors such as class, race and culture to shape people's experience of the impacts of disasters (Rocheleau et al., 2013).

3. Malawi: physiographic and socioecologic context

The effects of climate change in Malawi manifest themselves in various ways, including intense but sporadic rainfall, seasonal floods, droughts and prolonged dry spells. The social impacts of climate change in Malawi is within the context of other persistent structural problems, especially poverty and income inequality, chronic household food security and high rates of HIV/AIDS. More than 70% of the population lives in the rural areas as subsistence farmers and the national per capita income is about $300. Estimates suggest that 75% of Malawians live on less than $2/day and HIV/AIDS prevalence is currently at 10.6%. Malawi has more than 1.3 million orphans (Malawi Government, 2014). Food insecurity is persistent due to poor weather conditions but also due to historical reasons linked to structural adjustment programs (SAPs). These economic reforms have created a number of problems including the deterioration of peasant agriculture. To cope with the ongoing welfare decline, Malawians increasingly

resorted to a wide range of alterative livelihood strategies including internal and international migration, informal trading (cottage industries such as domestic production and sale of alcohol are particularly on the rise), and inter-household labour exchange (Bryceson, 2006). Inter-household labour exchange, locally known as *ganyu*, has particularly been on the rise in the recent decades. *Ganyu* developed within the historical context of the colonial plantation economy during British rule, as a strategy for extraction of labour and tax from the natives (Bezner-Kerr, 2006; Mkandawire et al., 2014). However, worsening poverty and livelihood collapse, especially in the wake of SAPs, underlies the resurgence of *ganyu* (Bryceson, 2006).

In January 2015, Malawi gained international spotlight after recording 3-month amount of rain in less than one week. Widespread flooding occurred in 17 out of the country's 27 administrative districts. Half of the country became a disaster zone and under a state of emergency. Referred to as a 'slow tsunami' rivers swelled from downstream, leaving areas over one metre under water, transforming vast areas dryland into lagoons. The floods displaced nearly 250,000 people and killed over 200 others. The media depicted water sweeping homes away like gazebos, large moors frayed into mud, seas of water swallowed entire cornfields. The national television also showed chaotic scenes of adults and children scampering for their lives, some perched on trees or rooftops for hour and days without food or water, or survivors wading through chest-deep waters amidst fears of sinkholes and crocodiles. Recovery teams narrated numbing stories of backpacks floating in muck only to discover corpses attached to them, many of them helpless children. Military pilots delivering emergency relief supplies returned from their missions with horrific stories of villages consumed by floods, bursting riverbanks and crumbling bridges and roofless homes.

The floods affected a vast section of the population but this study will specifically examine their impact on orphaned children as a particularly vulnerable group through a case study of Mangochi, one of the districts worst affected by these floods. Mangochi is a littoral district located at the southern tip of Lake Malawi with a population of nearly 700,000 spread just over an area of about 6000 km^2, making it a densely populated district and very vulnerable to adverse impacts of climate change. From a historic perspective, the vulnerability of communities in Mangochi to climate-related disasters has also been socially- and politically-produced. Marketed worldwide as a hub of tourism and fisheries, Mangochi is depicted in highly seductive ways in tourism circles, portrayed as portrayed as a paradise with sunny, sandy beaches and a plenitude of the freshwater delicacy, *tilapia*. Such glamorized depictions help to fuel growth of mass tourism infrastructure and dense settlements in the flood-prone lakeshore line of the district. The exotic resorts and golf courses abutting palm tree-lined beaches along the lakeshore, however, stand in stark contrast to the overpopulated, poor fishing communities comprised of makeshift homes on the outskirts of these attractions where the majority of the district's 100,000 orphans live. Many of these orphans work as vendors, gardeners, janitors, and clothes washers for hotels and as labourers on commercial farms in the district (Malawi Government, 2014). In 2007, government authorities rescued nearly 500 children from child labour on tobacco farms in District, many of them orphans.

4. Methods

4.1. Data collection and analysis

As it would have been difficult to get an in-depth understanding of the experiences of and responses to the floods through a large-scale survey, a small-scale qualitative study was deemed appropriate for gaining deeper insights into orphans' personal experience of the disaster and its aftermath (Miles and Huberman, 1994). Fieldwork for the study took place from May to July 2015. It involved in-depth interviews with 51 children orphaned by HIV/AIDS aged 16 and 18 years (16 being Malawi's minimum age of consent and 18 being upper age limit for being an orphan) from two villages of Mponda and Jalasi in Mangochi. The two villages have a combined total population of 15,000. The researcher wrote a letter of introduction to the two villages, outlining the purpose of the study and asking parents and guardians for orphaned children volunteer in the study. A local organization involved in post-flooding disaster response in the district, Thandizo, (pseudonym to protect the identity of the children) assisted with the effort to establish contact and working relationship with the two communities.

Purposive snowball sampling guided recruitment, extending the sample to ensure maximum variation of participants (Strauss and Corbin, 1997). All participants signed a written consent prior to the interview. Each participant had a legal guardian (e.g. surviving parent, uncle, cousin, or other member of extended family) who signed a written accent. Informed consent forms included information that participants are at liberty to decline participation, withdraw from the interview, or refuse to answer any question about which they felt uncomfortable. The informed consent form also contained information that participants' decision to decline or withdraw from the interview would not jeopardize their relationship with Thandizo. All invited participants accepted to take part in the interviews, except one who relocated to a different village. The author conducted the interviews; he is fluent in Chinyanja (local language). The interviews lasted an average of 40 min. Participants did not receive any compensation.

Fluency in the local language and previous research experience with children in the area may have affected the way the researcher perceived and processed the stories of orphans. However, the researcher continually self-reflected on his position, feelings, and personal judgements in order to minimize the potential for bias. The study also adopted an interaction style widely recommended in the literature on how to conduct research with children such as open-ended questions, encouraging longer responses, and avoiding single-word response questions, suggestive questions and interruptions (Greene and Hogan, 2005). Counselling services were available through Thandizo. However, none of the participants in this study felt that they needed such services. The interviews were audio-recorded with participants' consent and guardians' approval, and were later transcribed and translated into English by the researcher.

The study used Nvivo 8 software to facilitate thematic analysis. The researcher created blocks of narratives and sorted them into a matrix along with categories and other key issues (Strauss and Corbin, 1997). The enabled identification of emerging themes and assigning of codes, with particular attention to both implied and overt ideas within the social and cultural context of Malawi. The researcher looked for words that were repeated and key indigenous terms like, for instance, *njala,* which on the surface means hunger but in everyday parlance, it more encompassing because it means extreme poverty; or words such as *nyengo*, which literary means time but it refers to adverse weather. Thus, being a native speaker, the researcher was able to capture intricacies of meaning within the transcripts, paying particular attention to important moments in the interviews, and pursing deeper meanings. The analysis also involved assessing the frequency of themes and searching for terms that were potentially recurrent to assess whether they suggest any emerging pattern. The majority of ideas that formed the themes were expressed in indigenous terms equivalent of English terms such as; poverty, desperation, adverse weather, derailed lives, and recrimination. While these terms may appear simple on the surface, they are important expressions of adversity in Malawi's sociocultural context. Linked to these themes were sub-themes such as survival, ruined homes, caring for siblings, recrimination, ailing parents, property seizure, memories, and piecework. The study received ethical clearance from both the author's institution and local authorities in Malawi.

5. Results

The results of this study highlight everyday challenges that orphans

faced in the aftermath of the January 2015 flash floods in Malawi. The findings are grouped into three broad themes: preexisting household vulnerabilities; livelihood collapse; loss of mementos. Direct quotations are used to ground perspectives of the children. Pseudonyms have been used to protect the identity of orphans. Age and education level (NF = No formal education; PE = Primary Education, SE = Secondary education) of the children are provided at the end of each quotation.

5.1. Pre-existing household vulnerabilities

Many orphans stated that because their houses were already in a poor physical state prior to the rainstorm, the flooding simply made things worse. Several orphans told stories of their dwellings quickly crumbling, floating on surges of water, or completely flooded with within the first few hours of the rainstorm. Mateyu explained how his family's flimsy house exacerbated safety concerns.

> …our house was like a lagoon…because the roofing was patched up with grass and padded with metal, it was tossed off in the very early hours of the rainstorm. My two little brothers, my mom hankered in a corner all night…We could barely hear each other in howling wind, and we were so wet, cold and shivering. I was especially worried with my mom though due to her condition [18, SE]

But it also quickly emerged that prior health status of parents and/or guardians of orphans compounded safety issues during the rainstorm. For instance, Mateyu's mother was HIV positive and she was battling a vicious episode of pneumonia the first night of the storm. Mateyu's father died the year before and while his mother was now the head of the house, being the eldest son, and with his mother too frail, he was the *de facto* head of the family and therefore cared even for his younger siblings. When asked why his family did not evacuate to a nearby school where some families had reportedly sought shelter, Mateyu's initial response was that it was "too dark", and that the blizzard pummeled ferociously. Similarly, several other orphans reported being afraid 'to venture out and weather the storm'. Afterwards, however, some orphans started talking about feeling "trapped", and when probed to explain further it emerged that it wasn't just the severity of the storm that prevented many orphans in the area from leaving their flimsy homes and evacuating to safety. Tabitha, for instance, said that she could not leave her bedridden foster grandmother behind:

> …The school is nearby but I could not have left her. …she is the only parent I have left. I thought it would have been way riskier for her to walk all the way with her in pitch darkness, in waist-deep water while trying to dodge flying debris. I had no means of getting her there…we just cowered down in the one room that still had a patch of roofing… [17, PE]

Several orphans also reported being compelled to stay behind because they felt obliged to protect with their frail parents or ailing guardians.

The orphans whom we interviewed also reported that the terrible personal experience of the floods made them grieve the loss of their parents even more. Some of them wondered if things might have turned out differently if their parents had been alive. It was clear that fear and a deep longing for their parents gripped them. In fact, a few orphans argued that not having parents was the very reason they were "terribly" affected by the floods in the first place. Alinafe explained:

> My father left us a very good house [nodding her head in pride]. This was a really good house…But soon after he died my mom told us that we were going to move out of the house. She would not tell us why… but after pressing her she revealed that she was under intense pressure from our uncle and that for the sake of peace in the family she would surrender the house and the car to them…So she had to find another place, and we hastily cobbled up this hut. [16, SE]

The quote above depicts a kind of ordeal that many surviving families and children endure when they lose their parents to HIV/AIDS in Malawi. Property grabbing or threat of property seizure by extended family members following the death of a parent, especially a father, is still very common although it usually goes unnoticed or unreported. This type of concern came up in a number of interviews with the orphans. Abi, for instance, recounted a story about relatives "swooping in and dividing up the property", leaving his siblings and mother destitute. Patuma also told a numbing story of close relatives plotting to take over property even before her father died:

> At first we were happy to have them over with us at our house because my mother really needed an extra pair of hands after our father had been bedridden for months, so we felt relived… But we started smelling a rat when one day my uncle asked my mother if my father had a bank account and how much he had in savings… [16, PE]

There were also cases where even neighbours were involved in 'looting' deceased's effects but it is mostly close relatives who are the culprits. In Malawi, when an HIV/AIDS-related death occurs in the family, especially when it's the husband, it is typically marked by intense controversy about who initially brought the virus into the family. Even though studies have shown that men are more likely to engage in an extramarital relationship, cultural norms around gender are such that the woman ends up incriminated. Kinsmen from the husband's family typically use such accusations to justify property grabbing from widows, seeing it as a punishment for the woman's alleged sexual transgression.

It was also reported that some of the families were forced to rent out their homes and relocated because of poverty as highlighted by Bright:

> My father left us a good house but what is the point if we couldn't even feed ourselves…My mother decided to rent out the house so she can rent a cheaper home and keep the rest of the money to pay for my education. But now when I look back, I think we would have been pretty safe there. [16, SE]

Some orphans also reported that their families stood their ground and refused to cede anything to marauding relatives but flouting the demands of kinsmen often came at a huge cost. Agatha, for instance, explained how a hostile encounter within her uncle over her father's property years back finally 'backfired':

> …so we advised our mother not to give into the demands. In retaliation, our uncle cut ties with…like disowning us. He is still very bitter about it… So when he heard that our house was destroyed by the rainstorm and that we had lost a lot of things, I hear he said our greed had finally paid off. He has vowed never to help us…or even hear anything about us. [18, SE]

5.2. Livelihood transitions

Accounts from FGD and IDI revealed that for many families, the flooding had a catastrophic effect on the means of survival. Not only were homes destroyed, but the rainstorm also flooded living spaces and destroyed significant amounts of valuables and belongings. For instance, it was reported that families involved in cottage activities such as baking, brewing, pottery, and food preparation, which are typically done within the vicinity of the home suffered major setbacks. It should be noted that although these losses were generally suffered by many families in general, they were more drastic and far-reaching among orphaned families, as explained by Ashraf whose father died years ago and now lived with her mother who herself lives with HIV/AIDS:

> I had about K7000 (US$ 10) worth of groceries and I lost everything to the rain. My mother took the last bit of the money my father left for us and put it into this business…we depended on the small

profits to buy medication for my mother but now we don't know what to do. [16, PE]

Other orphans complained the rainstorm ruined their entire season's harvest. With water several feet high, a lot of foodstuffs stored within homes were either destroyed or simply swept away. There were complaints that the floods "couldn't have come at a worse time". Pacharo bemoaned the loss of an entire harvest that was spoiled by sludge.

We kept all the food in one bedroom but when the rainstorm came we did not know what to do with it. Water was everywhere. We had nine 50 kg bags of maize, we lost each one of them… they were all completely soaked in sludge, some of it got swept away when knapsacks ripped. I cannot even begin to explain how it feels after all that sweat… [16, SE]

Reportedly, for orphans the profound grief about the loss of livelihoods or stockpiles of hard-earned food during the rainstorm was not just about household food security. It was a matter of life and death. This is because livelihoods in these families were directly also connected to the health and wellbeing of their surviving parents, many of whom living HIV/AIDS and on antiretroviral (ARV) treatment. The children explained that their surviving parents required good nutrition to counter the side effects of the HIV/AIDS medication and to stay healthy.

When asked as what else he was doing to survive, Pacharo explained that he had been going to doing *ganyu* in order to earn some cash and continue supporting his family. *Ganyu* is local word for ad hoc labour. Payment for *ganyu* is cash or in kind. As an escape from extreme poverty, *ganyu* is for the destitute. As a result while acting as a safety net, ganyu is also a highly stigmatized form of labour (Mkandawire et al., 2013; Bezner-Kerr, 2005). Many of the children interviewed in this study reported that their participation in *ganyu* has generally intensified in the aftermath of the floods due to lack of food and poverty. However, burdened with domestic responsibilities against a backdrop of extreme poverty, orphans said that they were far more likely to enter and stay longer in *ganyu* contracts. Hakim recounted his own experience:

In the morning, I go to school but when I come back I proceed to look for *ganyu* around the area. It's not easy to find *ganyu* these days because the floods affected everyone and people don't have money. They may give you the work but sometimes it takes time for them to pay you…sometimes one month. I would not be doing this kind of work if I had parents to take care of me… [17, NE]

It also emerged that although other non-orphaned children also engaged in *ganyu* their unique status as orphans set them apart from these other poor children. To be young, poor, parentless and a casual labourer at the same time was to be unusually vulnerable and defenseless. But these children said they would do anything for their ailing parents who need good food to stay healthy and avoid the side effects of the HIV/AIDS medication.

Indeed many of these children complained that *ganyu* was not an easy option. Apart from the fact that searching for *ganyu* was time-consuming, there were other major concerns that arose because of their overdependence on *ganyu* as summed up by Mitole:

…Some patrons have a kind heart and are very caring but in some homes I also encounter inexplicable hostility and ridicule, sometimes including even from children…I feel like walking off the job but when you have just lost everything [to floods] and have no-one to turn to what do you do? If your mother's life literary depends on it, do you even have any choice? [16, PE]

Dismal stories of orphan clashes with 'housewives' over norms of civility and work ethos were common. Several orphans recounted experiences of verbal abuse while doing *ganyu* in other people's the homes, evident by the long list of accusations levelled against them: "lazy", "dishonest", "unreliable", "filthy", "immoral", "stubborn" and "unkempt". The children talked at length about some mothers seeing no reason to treat them with "the kind of compassion they would like to see their own children treated".

Female orphans generally indicated that the floods have increased the amount of domestic work they now had to do. For instance, Jabu reported that the rebuilding of the homes was heavily dependent on female labour:

My brother and I rebuild but with nothing, we decided to build a simple mud hut …I had to fill the walls with gravel. It was very tough to prepare the earth mortar and plug into the walls. And I did all the smearing as well, all the walls and the floor…So I missed out on my most of my afternoon classes for two months and I am worried about my school progress… [17, SE]

Instances of female orphans being involved in rebuilding their damaged homes were not as common. However, many female orphans complained that the flooding had damaged sources of drinking water in the village. The orphans said that the runoff swept sludge and sewers from pit latrines into boreholes and protected springs, infecting drinking water. Female orphans were the ones mainly concerned about lack of potable water and images of shallow wells uprooted by runoff and transported several hundred meters away from installation sites saturated their memory of the floods. They reported seeing floating pieces of broken plastic pipes from demolished water pumps mangled with debris.

…drinking water is a big problem. I go so far to fetch water every morning. I must start off at 5.00am otherwise the queue would get too long for me to come back in time for school…I often get back so tired that I cannot concentrate in school…diarrhea is still a big threat, so we can't use this river. [18, PE]

The orphans observed that these demands would have been much less onerous had their parents been alive or more healthy. A number of orphaned girls who reported taking care of their sick mothers expressed fears about the risks associated with lack of potable water and poor hygiene in the aftermath of the flooding. The concerns were not just in terms of lack of safe drinking water but also in terms of their ability to provide safe and effective home-based care to their surviving parents and guardians. Nadika, whose mother was on home-based care for HIV/AIDS explained:

My father died more than 5 years back and my priority number one now is to care for my mother. I will do anything to take care of her… I am very worried though about the water; it is my biggest headache. Since our shallow well got washed away by the floods, we have been using a borehole really far from here…The challenge is getting her to stay away from diarrhea; in her present condition even a mild episode could be fatal. [16, SE]

In addition to lack of potable water, it also emerged that after the floods girls experienced a dramatic increase in the time spent on processing family food. For instance, they said that the floods damaged the only maize mill in the area. Reportedly, the storm twisted the corrugated roofing and blew off the deck of the shelter. The mortar was partial dug out of the concrete base and the engine suffered major mechanical and electrical damages. As a result, these girls now have to walk more than 10 km to get to the mill.

5.3. Loss of family mementos

The children also said that the floods were especially shattering for orphaned families because they destroyed family keepsakes. Participants explained this loss in the context of floods sweeping, soaking and smashing valuable family and personal artifacts and objects. There was a sense among many of orphans that the hardest thing after losing their parents was seeing the rainstorm shutter the very last artifacts they had left of their beloved parents as explained by Hadia:

> I don't have even one single picture left of my mother. I had so many pictures taken with my mother but every single one of them was drenched by the rainstorm. My life is just blank…the image my mom is fading in the distance and I have nothing to nourish that image with or to keep it from dying… [17, SE]

Some orphans bemoaned the loss of valuable objects such as cross pendants or shubha (Muslim prayer beads) which symbolized the cultural and religious values they shared with their parents. In one instance, Lezitha talked about the loss of a memory box that contained drawings and artwork she had done together with her mother during her final year of life:

> The rainstorm was so abrupt… I was woken up around midnight when a mighty thunder cracked, enough to wiggle the house. We evacuated in panic as one side of the roof collapsed and narrowly missed my father…There was no time to pick anything… I mean not even a spoon. There's nothing to hold on to, nothing left. [16, PE]

A few orphans expressed relief that not all was lost because they were other things that could not be destroyed by the floods. For instance, Patemba said that she still dreams about her parents and still recites jingles her mother taught her and sings them daily before bedtime. Similarly, Janet has fond memories of her mother reciting folklores around the evening fire and she sometimes narrates them to her close friends as a way of reconnecting with her mother. However, for the most part, children explained that mementos were the most crucial aspect of their intertemporal relationship with their departed parents. They agonized that losing these keepsakes "feels like your last breath has been sucked out of you". In fact, it was interesting to note that although none of the participants' relatives died in the disaster itself, several orphans characterized the loss of mementos as "the last nail in my parent's coffin". Abdul elaborated:

> But what would you if you lost your only connection with your dead parents?… With the pictures [her mom's], I could look at them, smile, and feel her life, but now she's now totally gone, forever. [17, SE]

Many orphans interviewed in this study described in vivid terms their relationships with their mothers prior to death and the continued cordial bonds these mementos symbolized. In one instance, Julia recounted a story about heavy runoff gushing through a family burial ground sweeping off wreaths, canopic jars, pottery and other materials family members had used to pay last respect to their relatives. Abdul (cited above), whose deceased mother's first anniversary coincided with the rainstorm remarked: "life can't be more insulting". For many people in this area graves are intimate places culturally and spiritually and family members perform various rituals on these sites periodically to preserve their ties with their loved ones. For orphaned children like Abdul, the floods violated the sanctity of this site and despised his beloved parent.

6. Discussion and conclusion

The study highlights the diverse range of circumstances that arise when children lose their parents HIV/AIDS and how the conditions that arise from such a state of affairs in turn shape the risk of the impacts of climate change. A number of individual and sociocultural factors mediates orphaned children's risk to the effects of climate-related disasters in Malawi. The findings suggest that orphans are particularly increased risk of the impacts of climate change because of a number of factors. These include the physical health condition of the remaining or foster parents, gendered roles they inherited as result of parental death or incapacitation, and the lack of access to social and economic resources and supportive relationships needed to cope with the aftermath of the floods. Also vital is the sense of dislocation resulting from the loss of valued objects that provide a sense intertemporal connection with deceased parents. The findings of this study are generally consistent with studies that have argued that vulnerability to climate change is socially- and politically-produced (Adger et al., 2009; Ajibade et al., 2013). However, this study still adds to the literature by highlighting the unique personal, family and contextual circumstances that emerge when children lose parents to HIV/AIDS, and how these conditions constrain the ability of children to reduce exposure to or recover from disasters induced by climate change.

A key issue emerging from the findings is that children's role as caregivers of ailing parents and/or foster parents imposed constraints on their ability to evacuate during the flooding. A number of studies have documented the ongoing reorganization of the family and domestic relations in response to the HIV/AIDS epidemic (Evans and Becker, 2009; Bauman et al., 2006; Skovdal et al., 2009). An increasing number of orphans are under the custody of ailing parents or grandparents but these guardians are themselves also dependent on the children for everyday chores, care and support. The poor physical health status of guardians emerged as a significant barrier to evacuating to safety during the flooding and the children under these guardians were doubly disadvantaged. Not only were supposedly wardens physically incapable of mobilizing dependents under their care to evacuate to safety but that the children felt morally compelled stay behind because of social norms that govern relationships of mutual reciprocity. Thus, this study draws attention to the ways in which the configurations of domestic relations in the context of HIV/AIDS create new roles and expectation that shape the ability of children to respond to climate-induced disasters.

The death of a parent spells disaster, drawing surviving children into domestic roles otherwise meant for adults (Mkandawire et al., 2014; Robson, 2000). The floods destroyed the livelihoods of many families thrusting children into casual labour, locally known as *ganyu*. However, the findings also suggest that orphans had prolonged engagement in *ganyu* labour. Historically, *ganyu* has been viewed as an escape to extreme poverty, but its increasing incorporation into market relations in the recent decades has been said to be eroding its primary orientation as a safety-net for the extreme poor (Mkandawire et al., 2014; Bezner-Kerr, 2005; Bryceson, 2006). The findings of this study support those of previous study in suggesting that, rather than being an escape from extreme poverty, increased participation in *ganyu* indicates extreme vulnerability. The findings also suggest that overdependence on *ganyu* among signals increasing social inequalities. To talk about stark inequalities in a country with per capita income of $300 might seem farfetched. However, paying attention to local dynamics of social exclusion, this study highlights how poverty differs from vulnerability by showing climate change impacts vary even among people of seemingly equivalent economic standing. First, the findings demonstrate that flood-induced *ganyu* reduces orphaned children to suppliers of cheap labour. Second, by creating conditions where orphans overly rely on *ganyu* to survive or take care of their families, the floods had the effect of locking orphans into highly unequal labour relations and reinforcing existing inequalities. Third, the psychological abuse suffered by orphans while performing *ganyu* can exacerbate emotional wellbeing of these children and further damage orphans' sense of self-worth.

The issue of the right of children to deceased's parent's property remains a major concern among families affected by HIV/AIDS in SSA (Izumi, 2007; Mendenhall et al., 2007; Mwenda et al., 2005). The findings of this study demonstrate cultural norms that pit children's rights to their parents' property against the interests of the extended family greatly amplified orphans' exposure to the rainstorm. Family feuds around the right to inherit property within the traditional extended family system propelled orphans into poor housing, squatter areas, and other disaster-prone locations where they faced increased exposure to flooding. In addition, these family tensions placed bereaved children at a great disadvantage, by dislocating them from kin ties and hampering access to social support they needed to rally from the effects of the flooding. The apparently injurious role of the extended family as

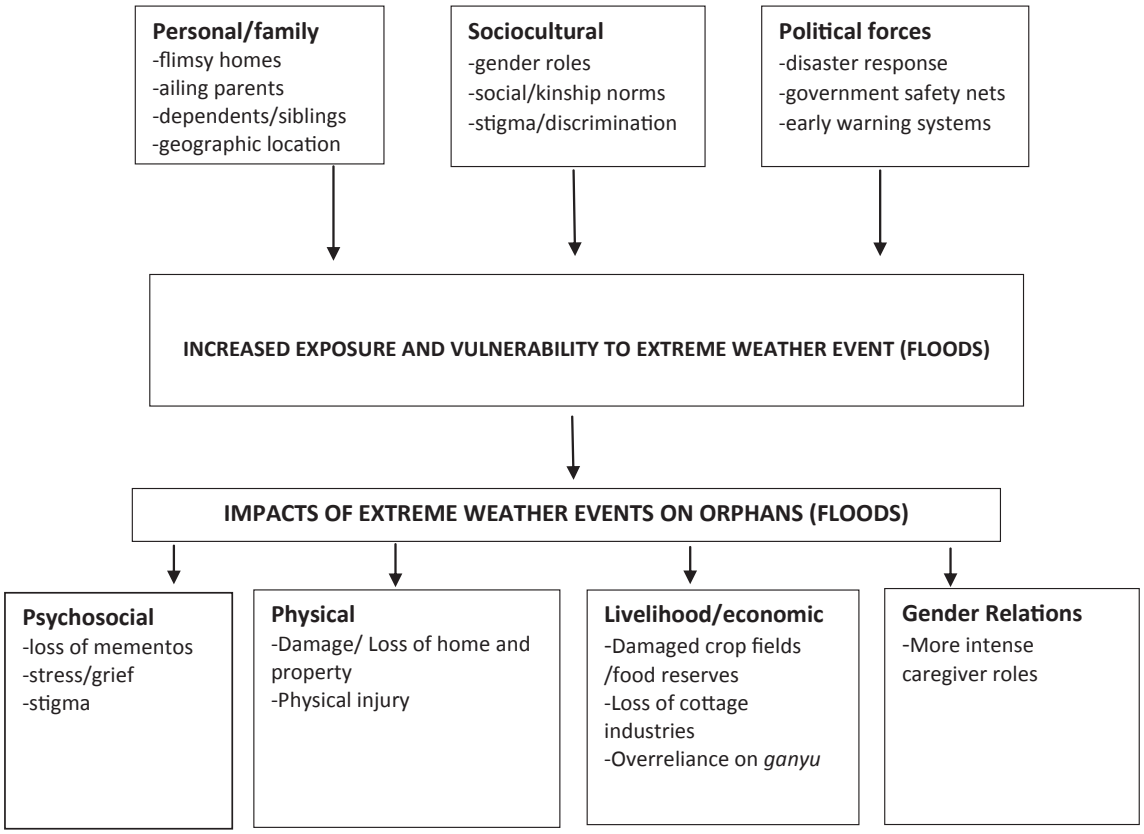

Fig. 1. Conceptual framework – vulnerability of orphans to climate change impacts.

revealed in this study, especially its failure to shield orphaned children from climate-induced disaster, stands in stark contrast to discourses that portray it in a celebratory tone, as a safety net for orphans (Chirwa, 2002). Like the case of *ganyu* described above, this contradiction speak to the highly contingent manner in which these informal safety-net systems operate in practice.

It was evident from the study that mementos occupied an important place in the lives of orphaned children. Studies have shown that mementos provide a sense of continuity of the self through time, focus of the involvement in the present, and guideposts for the future (Lohmann, 2010). When viewed from this perspective, relationships between orphans and their parents are creations represented in mementos and artifacts. Because mementos of the dead express the spatial and temporal nature of human relationships (Hallam and Hockey, 2001; Stasch, 2009), the destruction of these artifacts by the floods was especially shattering for orphans who generally had an emotionally precarious pre-disaster existence. Floods destroyed memories of common experience that nourished orphans' relationship with their departed parents. Many studies have shown that climate disasters have enormous psychological impact on communities (Horton et al., 2010; Costello, 2009; Berry et al., 2010), but this study adds that the emotional impacts of climate-induced disasters such as floods can exacerbate vulnerability if they occur in children already reeling from the trauma of parental death.

Drawing on the initial understanding of social vulnerability of orphans more generally and on the findings of this study, this paper proposes a conceptual framework for understanding the vulnerability of HIV/AIDS orphans to the impacts of climate change (see Fig. 1). The conceptual framework has three key levels: the personal/household circumstances, sociocultural context, and political forces. As the findings suggest, at the individual/household level, the predisposing factors include existing health status of the surviving parent/guardian, physical state of house, or geographic location. At the sociocultural level, predisposing factors include gender norms, stigma and discrimination, and kinship norms. Political forces shaping orphans vulnerability to the impacts of climate include factors such as availability of safety nets for vulnerable groups and early warning systems. The framework highlights the role of micro and macro-level factors in predisposing orphans to the impacts of climate change, which include psychosocial distress (e.g. more grief), physical (e.g. physical injury and damage to home), livelihood/economic (e.g. loss of food reserves) or worsening gender relations (e.g. more intense caregiver roles).

In conclusion, this paper has examined a set of circumstances that arise when children lose their parents and how these circumstances mediate exposure to climate disasters in children in regions heavily affected by the HIV/AIDS epidemic. Situational factors such as the health status of a parent or guardians, domestic chores children assumed after the incapacitation or the death of parents, and social norms governing property inheritance within the traditional extended family system amplify the impacts of the floods. In addition, orphans' increased dependence on *ganyu* in the aftermath of the floods and the associated risk of exploitation inherent in this form of inter-household labour relations speaks to the potential of climate change impacts in exacerbating existing social inequalities. This study draws attention to the need for researchers and policy makers to devote increased attention to the impacts of climate change on vulnerable children.

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